

IOWA STATE UNIVERSITY
College of Agriculture and Life Sciences

STORIES

IN AGRICULTURE AND LIFE SCIENCES | **FALL 2007**

A large photograph of two men in a field of green plants. The man on the left is wearing a light blue polo shirt, light blue jeans, a black baseball cap with sunglasses on top, and a tool belt. The man on the right is wearing a blue and white plaid button-down shirt and jeans. They are both looking down at a plant. The background shows a clear blue sky and a flat horizon.

Impact: Bioeconomy



**GRAD STUDENT GAINS FIRSTHAND
RESEARCH AND FARM EXPERIENCE**



**LEGENDARY PROFESSOR
REFLECTS IN RETIREMENT**



**COLLEGE ALUM LEADS
IOWA AGRICULTURE**

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FOREWORD

SOME PEOPLE ARE NATURAL STORYTELLERS.

John Pesek, Charles F. Curtiss Distinguished Emeritus Professor in Agriculture and Life Sciences in agronomy, is one who always has a good story to tell. His stories are always interesting, meaningful and to the point.

Given Dr. Pesek has served Iowa State University for one third of its 150 years, he has a number of stories to tell. He's been working to tell the story of the agronomy department for years now, writing chapter after chapter as he finds time between meetings, lectures and trips abroad. He may joke about his work never seeing print, but his persistent effort shows how important his task is – recording and sharing the stories of the people who made Iowa State University what it is today and how their efforts have influenced the world.

We'd like to take a lesson from Dr. Pesek and tell some of our own stories before they become history. As the newly renamed College of Agriculture and Life Sciences, we have many stories to share with you.

Stories we hope will inform and inspire you. Stories about how the college is constantly striving to make new discoveries, encourage and educate students and serve Iowans. Stories of the people who make this college one of the premier institutions of agriculture and life sciences in the world.

We'll begin with stories of historic leaders like Dr. Pesek and student leaders who are achieving national honors even as they learn and develop into experts in their industries. Our section on the college's work in the bioeconomy illustrates the strength and depth of our faculty who are working to uncover sustainable means to meet the world's energy needs. Our alumni stories demonstrate the impact of the college through its successful graduates. As you will see, our alumni are making meaningful imprints on the world, both small and large.

You'll read stories of success, of engagement and of service. As alumni and friends of the College of Agriculture and Life Sciences these are your stories. We hope to share them as Dr. Pesek would, in an entertaining and relevant manner that allows the real story, the real person to shine through. We hope you find these stories as compelling as we do.

Kind regards,

Melea Reicks Licht



ON THE COVER:

Everyone's first question: Is that hemp? No, it's kenaf – a relative of cotton used for biomass and industrial fiber. Roger Hintz (left), agronomy assistant scientist, and Ken Moore, agronomy professor, compare two varieties of kenaf among the eight they grew to study yield and fiber qualities. Learn more about how Moore's crew and others are working to discover future biomass crops for Iowa on page 12.

WELCOME TO THE INAUGURAL ISSUE OF *STORIES in Agriculture and Life Sciences*, a magazine to keep you informed about the students, faculty, staff and alumni in the College of Agriculture and Life Sciences at Iowa State University.



As I travel around Iowa, meeting with farmers and community leaders, business owners, alumni and parents of current ISU students, I always am touched by the genuine interest shown in the college. In responding to the numerous questions, I frequently hear, "Really! I didn't know the college was working on that."

I tell them that we seek to continue building on a legacy that began in 1858. For 150 years, the college has played a significant role in the state's growth and development — educating generations of intelligent, thoughtful producers and citizens; building the genetic potential of crops and animals; developing healthier, safer foods; conserving and safeguarding our soil and environment; and envisioning how to stay a step ahead of a rapidly changing world.

STORIES seeks to tell the college's story — about our deep commitment to agriculture that we demonstrate through research, teaching and extension programs; about the increasing number of students we educate across 15 departments. We want to keep you aware of the college's response to the opportunities and challenges facing agriculture — and life — in Iowa and the world.

I recently talked to a young undergraduate in agronomy about her classes. Thinking back to my undergraduate days, I asked, "So what do you find the most challenging part of your courses this semester?" She surprised me with her response: "GIS mapping." In that answer, I recognized once again how much the terrain has changed for our students in agriculture and life sciences.

Agriculture and life sciences increasingly play a more prominent role in the world. The growing need for food, feed and energy and the increasing burden on arable land makes the need for research and technological innovations all the more significant. It's exciting to see that future taking

shape in the research laboratories, field plots and classrooms in our college.

I hope by reading these stories you'll gain insight into the breadth and depth of our dedicated faculty and staff and the incredible potential of our students. I invite your comments.

Let me close by telling you a story.

This fall semester I've been helping Associate Dean David Acker teach a leadership class for freshmen recipients of our Scholarships for Excellence in Agriculture and Life Sciences. We meet around a table in a conference room in Curtiss Hall with the portraits of the previous deans of the college looking down upon us.

Recently, the students discussed leaders who'd made a strong impression on them. Their answers were remarkable. They included world figures like Gandhi, Eleanor Roosevelt and Nelson Mandela; Liberian President Ellen Johnson Sirleaf, who recently was awarded the U.S. Presidential Medal of Freedom; and American soldiers, high school teachers and local pastors.

“... I WAS LOOKING INTO THE
FACES OF TOMORROW'S LEADERS.”

It struck me then, scanning this diverse set of young people — majoring in animal science, biology, agricultural biochemistry, agronomy, genetics, animal ecology, horticulture, microbiology and pre-veterinary medicine — that I was looking into the faces of tomorrow's leaders. I could imagine their faces set down in portraits someday; maybe not as college deans, but people who made a difference in the world.

What I saw impressed me. It made me feel good about the future. I hope that what you read in *STORIES* strikes you the same way.

Wendy Wintersteen, Dean



Dean Wintersteen, Associate Dean Acker and members of a freshman leadership class.



DISTINGUISHED PROF'S INFLUENCE FELT FOR 50 OF ISU'S 150 YEARS

By Melea Reicks Licht

LOOKING BACK ON A CAREER spanning 50 years at an institution existing for 150, John Pesek has seen significant change on campus, in Iowa and the world – some of which he instigated.

Despite receiving countless awards for his service to agronomy, agriculture and human relations, Pesek has reservations about his reputation as one of the major influences on the university and the global scope of agriculture.

After he was named one of the 150 most influential Iowa Staters as part of a sesquicentennial tribute, he wrote a thank you note to the editor.

"I am very humbled and profoundly grateful," he wrote. "I feel like a tiny intruder in a forest of giants ... I had

never considered myself to be worthy of this recognition."

Regardless of Pesek's opinion, his colleagues have long thought him among the greats.

"John Pesek is one the giants in agronomy and agriculture," says Kendall Lamkey chair of the ISU agronomy department. "His influence here at Iowa State still persists as he is one of the top leaders and visionaries the field of agronomy has ever known."

As ISU celebrates its sesquicentennial, Pesek reflects on how the university seems less personal today and has less general public support than 50 years ago. However, he says, "It pleases me that agronomy sustains a spirit of cooperation better to serve

the public, to wit, the large number of extension, teaching and research initiatives led by agronomists."

The university's sesquicentennial celebration kicked off with a birthday celebration during Veishea last April and will continue through the day it was established, March 22, 2008. The College of Agriculture and Life Sciences and its departments have participated through displays, seminars, a fall alumni tailgate, collection of alumni memories and historical essays and more. Check out the college's 150th website at: www.ag.iastate.edu/stories.

Pesek, Charles F. Curtiss Distinguished Professor in Agriculture and Life Sciences and agronomy emeritus professor, serves on the college's sesquicentennial committee chaired by Arne Hallam, chair of the Department of Economics.

Pesek is world renowned for his role in the 1989 National Academy of Sciences Report on Alternative Agriculture.

"The report paved the way for worldwide acceptance of 'sustainable agriculture' as the ultimate goal of all agriculture," Pesek says.

His research and advocacy in the area, as well as the John Pesek Colloquium on Sustainable Agriculture hosted annually at ISU, has made Pesek's name synonymous with sustainable agriculture.

"Sustainable agriculture is really a concept. In terms of practices, it is a moving target and depends upon a myriad of factors including time, place, technology and need," Pesek says. "We cannot consider ourselves sustainable until we know we and our civilization are still here as far into the future as the time elapsed since the emergence of agriculture (and civilization); at least 10,000 years, hence."

He began his service at Iowa State in 1950 as an assistant professor in soils thanks to the unprompted recommendation of Louis Thompson, a former instructor at Texas A&M who became a colleague and friend at Iowa State. Pesek earned his Ph.D. from North Carolina State and his bachelor's in agricultural education and master's in agronomy at Texas A&M.

After moving through the ranks to professor, he was surprised by an offer in 1964 to serve as head of the agronomy department, but gratefully accepted the helm of what he considered a highly respected department.

"I spent 26 years as head dedicated to advancing first the faculty members and staff of the department, then its physical and financial resources," Pesek says. "Our goal was to make student success possible in the curriculum and in post-college life."

During his term as head from 1964 to 1990, Pesek also served as interim dean of agriculture from 1987 to 1988.

He has worked extensively internationally, emphasizing the environment, production agriculture and education.

Pesek credits his successes to "highly competent people around me most of my career including a first class department and college."

He retired in 1992, but taught a course he developed for international agronomy graduate students until 2001. Pesek continues to participate in departmental activities and keeps regular office hours. ☺

IN HIS OWN WORDS:

Audio of John Pesek and Doug Cooper discussing some of the achievements made in agronomy over the years is available on-line at: www.ag.iastate.edu/stories.

John Pesek wrote a remembrance of Howard Robert "Jerry" Meldrum as part of the College's sesquicentennial celebration. The essay is available on-line at: www.ag.iastate.edu/stories.

THE PESEK TOP TEN

A career like John Pesek's is tough to sum up, but he provided the top ten highlights of his career (in no particular order).

Served terms as president for American Society of Agronomy (1979) and the Soil Science Society of America (1986)

Fostered the Council for Agricultural Science and Technology

Helped organize the First International Crop Science Congress

Penned ISU's first nondiscrimination statement, 1970s

Participated in the Pontifical Academy of Sciences, 1972

Enhanced the USDA-ARS North Central Regional Plant Introduction Station

Supported the development of the Seed Science Center, established, 1978

Created economically based fertilizer recommendations with Earl Heady, professor of economics and Charles F. Curtiss Distinguished Professor in Agriculture and Life Sciences

Encouraged the construction of the National Soil Tilth Laboratory, 1989

Directed a major addition to Agronomy Hall and developed the Agronomy and Agricultural Engineering Research Farm

Hearty Hellos

New faculty in the college in 2007 included:

- **Tae Hyun Kim**, assistant professor, agricultural and biosystems engineering
- **Julie Blanchong**, assistant professor, natural resource ecology and management
- **Jesse Randall**, assistant professor, natural resource ecology and management
- **Larry Halverson**, assistant professor, plant pathology
- **J. Gordon Arbuckle**, assistant professor, sociology
- **Carmen Bain**, assistant professor, sociology
- **Dorrian Garrick**, Lush Endowed Chair, Animal Science
- **William Beavis**, Sprague Endowed Chair, agronomy
- **Thomas Lübberstedt**, Frey Endowed Chair, agronomy

Fond Farewells

Lorna Michael Butler, Henry A. Wallace Endowed Chair for Sustainable Agriculture and professor of sociology and anthropology retired from the university on Feb. 1. Butler joined Iowa State in 2000.

Harold Crawford ('50 ag education, MS '55, PhD '69), agricultural education and studies, retired June 22. Crawford joined Iowa State as an instructor in agricultural education and studies in 1965, eventually serving as professor and department head. He also served the college as associate dean for academic programs and director of off-campus and international programs. Recently, Crawford co-directed a \$3.8 million partnership to strengthen natural resources education in communities served by Native American colleges through a U.S. Department of Agriculture's Initiative for the Future Agriculture and Food Systems grant.

HOGBERG USHERS ISU'S DAIRY FARM INTO MODERN TIMES

By Ed Adcock

WHEN MAYNARD HOGBERG ('66 ag education, MS '72 animal science, PhD '76) was a gradu-

ate student at Iowa State in the early '70s, he remembers driving by the dairy farm on Mortenson Road south of campus and thinking how old it looked. It had been operating for more than 65 years at that time.

Soon after Hogberg accepted the position of chair of the Department of Animal Science in 2003, then-Dean Catherine Woteki called to tell him college administrators were announcing plans to close the farm and build a new one. It's about time, he responded.

As the new department chair, he dealt with the closing's aftermath, which included reassuring many that a new one would indeed be built. Some, including dairy science professor emeritus Fred Foreman, had their doubts. Foreman sought out Hogberg at a national meeting and jokingly wondered whether a new farm would ever be built. If it was, Foreman promised he'd be there at the opening.

Hogberg had the pleasure of recognizing Foreman, who lives in Arizona, as an honored guest on Oct. 20 at the ceremony opening the new Iowa State University Dairy Farm south of Ames.

"We fulfilled our promise. That's the kind of integrity we need to build trust," Hogberg says.



Hogberg is shown with "Jersey Jewel," a life-sized bronze cast of a cow created by alumna Duffy Lyon, inset, ('51 animal science) "the butter cow lady." The artwork welcomes guests to the Dairy Farm's entrance, and was made possible through support from Swiss Valley Farms.

The new dairy farm sends other messages, he says. It is evidence of the university's commitment to Iowa's dairy industry and elevates Iowa State's image among universities doing dairy research and education.

The facility, located across the road from the Ag 450 Farm, represents a huge advance in dairy teaching, research and extension at Iowa State.

The 27-acre complex will milk 450 cows and house more than 1,000 total animals. Funding for the nearly \$15 million facility came from proceeds

and training. Veterinary medicine students will gain experience with herd health programs on the cattle. ISU faculty and scientists from the U.S. Department of Agriculture's National Animal Disease Center in Ames will conduct research at the farm. On the extension side, the farm will be a training ground for dairy professionals.

Its research and outreach programs will help sustain the current growth in the state's dairy industry.

Hogberg says the Iowa Dairy Coalition, which Iowa State helped organize,

"WE FULFILLED OUR PROMISE. THAT'S THE KIND OF INTEGRITY WE NEED TO BUILD TRUST."

from the sale of ISU's other dairy operation in Ankeny to the City of Ankeny in 2005.

"Students need to be trained in a more modern setting. You can't train them on Model Ts and expect them to drive big trucks," Hogberg says.

Hundreds of students will benefit from the facility. All 742 of the department's undergraduates take courses that include dairy animals. Graduate students will use the farm for research

has set a goal of increasing Iowa's share of national milk production to 2.8 percent by the year 2010. The new dairy farm will be a key component in accomplishing that task.

A visitor's center at the front entrance will give a glimpse of the facility and the story of dairy science at Iowa State. Plans are for Dairy Science Club students to provide tours as a community service project. ☺

HARNESSING THE POWER OF CROP GENOMICS

By Melea Reicks Licht

BILL BEAVIS IS WORKING TO PUT the power of genomics into the hands of field agronomists and plant breeders. Beavis, the new G. F. Sprague Endowed Chair in Crop Genomics and professor of agronomy at Iowa State, is working an area that has come to be known as "translational genomics."

"There's a big gap between what's going on in basic genomics research and applied field research," Beavis says. "Translational genomics is the area of study that works to bridge this gap. It is especially appropriate work for a land grant university to find a way to use genomic data to solve problems in the field."

With a background in genomics in the corporate and nonprofit arenas, Beavis brought a broad perspective with him when he moved to campus in August. His bachelor's degree from Humboldt State University, master's degree from New Mexico State University and doctorate in quantitative genetics with a plant breeding major and statistics minor from Iowa State make him exceptionally qualified to serve as Iowa State's first Sprague chair.

Beavis was drawn to Iowa State for its land grant mission and commitment to science with practice. But what really sealed the deal for him was the opportunity to serve in a chair named for Sprague.

"I belong to the academic pedigree of George F. Sprague as one of his academic grandchildren," Beavis said. "I was Ken Frey's 100th graduate student and Ken Frey was George Sprague's first graduate student. It is an enormous honor to return to Iowa State and serve in such a capacity."

Beavis's work in translational genomics involves developing computer software to apply genomic knowledge to issues affecting crop health and productivity.

"The overall vision is to create a field tool for agronomists and plant breeders," Beavis says. "A handheld device



Beavis references information on a personal digital assistant in the field. The new device he's developing would look similar, but provide links to genomic databases.

would have the capability to take a sample, such as a leaf punch, and have the communications capability to access databases remotely."

According to Beavis, this tool is known as an "electronic field decision support system." It would analyze molecular biomarkers (which include molecules like DNA, RNA and proteins) in a leaf sample then reference the genomic databases. It would then statistically predict the value of the biomarker selection to the plant and its offspring. This would be a valuable tool, allowing breeders and agronomists to rapidly make decisions in asymptomatic environments.

Beavis sees numerous parallels between plant genomics and human genomics. He recognizes the potential for successful application of such a tool in human health care as well.

After integrating and standardizing genomic databases, finding associations between biomarkers and crop performance and providing information for breeding and management practices,

emerging communications technologies will remotely connect the field sample to the databases.

This sounds like an intense process. But, Beavis believes field kits could be ready in five to 10 years and public databases could sufficiently provide recommendations in 10 to 15 years. ☺

GEORGE F. SPRAGUE CHAIR

The Sprague endowed chair is funded by a private endowment to the ISU agronomy department.

Sprague is considered one of the fathers of modern maize breeding and is credited with bringing the corn breeding program at Iowa State to prominence. He was a member of the Iowa State agronomy faculty from 1939 to 1958.

ANIMAL GENETICIST FILLS JAY LUSH ENDOWED CHAIR

By Susan Thompson

A NATIVE OF NEW ZEALAND IS the first person to hold the Jay Lush Endowed Chair in Animal Breeding and Genetics at Iowa State.

Dorian Garrick arrived in the Department of Animal Science in August, after five years as professor of animal breeding and genetics at Colorado State University.

Lush, a Charles F. Curtiss Distinguished Professor in Agriculture and faculty member from 1930 to 1966, is considered the father of modern animal breeding and was one of the first to teach the importance of selective breeding. The Lush Endowed Chair was established in 2004. Tom and Jean Sutherland, Fort Collins, Colo., took the lead in establishing the Chair with a \$1 million commitment. Lush was Tom Sutherland's major professor during graduate school. Other former students, friends and family of Lush also have contributed to the endowment.

Garrick earned a bachelor's degree at Massey University in New Zealand in 1982 and a doctorate at Cornell University in 1988. He returned to Massey the same year and began work as a teacher and researcher.

In 1994, Garrick was named the A.L. Rae Chair at Massey University, a title he continues to hold. Rae, also a New Zealand native, earned a doctorate at Iowa State in 1950, where he was a graduate student under Lush.

Garrick's past research exposed him to the genetic improvement of a range of animal species and a variety of traits. "Animal breeding is using knowledge of genetics to improve populations," he says. "There is a tremendous amount of work being done in animal genomics, and knowledge being generated,



Dorian Garrick has more than Jay Lush's name as part of his new title at Iowa State – he also has Lush's desk. The ornate desk, which was originally a piano, was rescued by Richard Willham, Charles F. Curtiss Distinguished Professor in Agriculture and Life Sciences and emeritus professor of animal science, from a leaky garage as the Lush home in Ames was being sold. The Willhams used it in their home for many years before donating it to the animal science department when the Lush Endowed Chair was established.

that needs to be transferred into animal breeding."

At Iowa State, Garrick sees the greatest opportunity in beef cattle. He is a director of the National Beef Cattle Evaluation Consortium, which is responsible for the development of selection tools.


"The critical mass of universities working on beef cattle has declined," Garrick says. "That's sad, given the value of the beef industry. I feel an obligation for Iowa State to pick up the reins and assist with beef cattle improvements."

In particular, Garrick says he hopes to establish a closer relationship with the American Angus Association. "Iowa State has a long history of research and collaboration with Angus breeders," he says. "We have a herd of 450 registered Angus cows and I

look forward to making use of these animals in my research."

Garrick has found Ames to be "very much a college town," he says. "I'm impressed with the academic environment. There isn't a day without an interesting seminar somewhere on campus or interesting visitors from elsewhere in the world."

He's also impressed with Iowa, a state he visited briefly in the 1980s on a pheasant hunting trip. "There is a recognition of the importance and relevance of agriculture to the state, by people both within and outside the agriculture industry," he says.

The Department of Animal Science will hold a symposium honoring Lush on April 25, 2008, at which time Garrick will be formally installed as the Lush Endowed Chair. 

LEADERS LIKE CHWEE SUM UP WINNING AG BUSINESS CLUB

By Barbara McBreen

A CONVERSATION WITH ALLYSON Chwee will keep you on your toes. Chwee talks about game theory, quantitative math and macro- or microeconomics with ease. It's the expertise that's indicative of the students who make up Iowa State University's national award-winning Agricultural Business Club.

Chwee is a senior in agricultural business, economics and international agriculture from Elgin, Ill. She took the LSAT in October and hopes it will open the door to law school.

"I want to work in agriculture and I've always wanted to go to law school," Chwee says.

Ron Deiter, professor of economics and the club's adviser, says Chwee is an amazing student and representative of the club's members. When she was a sophomore, he says, she already had a lengthy resume.

"We have a high percentage of students involved in the club and they aren't just members — they are leaders," Deiter says.

Chwee is among the best. For the past two years she chaired the FFA barbecue committee, organizing and distributing food to 3,000 high school students who visit campus for the State FFA Leadership Conference. She's co-chaired the Ag Career Day committee for two years, tutors students in math and works to recruit new members to the club.

"To recruit we have fun activities like the tailgate to attract and retain current students, but we also reach out to potential students at Iowa's community colleges," Chwee says.

Chwee enjoyed high school economics, her grandfather's farm and 4-H. She knew she wanted to go into agriculture and Iowa State fit her needs.

"I chose this major because it's so versatile — you can farm, or work in merchandising, sales, risk management or insurance. Or you can work for a nonprofit, go to graduate school or law school," Chwee says.

For Chwee, the learning communities and honors classes made a difference in her college career.

"It was beneficial because you take all your classes with other ag business freshmen and you end up with a great group of friends," Chwee says.

In the honors program Chwee had the opportunity to participate in leadership seminars, develop lesson plans and help teach a class. She's currently working on her honors project and presentation for this year.

"For my project, I'm going to analyze how farmers choose the crops they plant," Chwee says. "This year, obviously, corn prices were high so many acres were switched to corn, but how high do corn prices have to be relative to soybean prices to make the switch?"

For now, Chwee is leaving her career choices open. If law school is an option, she plans to represent ag businesses. After two summer internships working for Ag Processing Inc. (AGP) she's ready for the corporate world.

"This summer I worked on biodiesel sales and government relations in Omaha," Chwee says. "I learned a lot, especially about the energy legislation currently in Congress and the proposed renewable fuel standard."

Chwee wrote an analytical article about the proposed renewable fuel standard, it was published in the October/November issue of AGP News.





Allyson Chwee is a leading member of ISU's award-winning Ag Business Club.

The Agricultural Business Club received the 2007 National Outstanding Chapter Award and National Creative Club Award from the American Agricultural Economics Association (AAEA). The club has earned the outstanding chapter designation eight times since 1992 and the creative club award five times since 2000.

GENETICS

DREW BECKY WEEKS TO IOWA STATE

By Barbara McBreen

BECKY WEEKS ('07 GENETICS) took genetics when she was a junior in high school and was hooked. So hooked, in fact, that she repeated the class her senior year, just for fun. Then she came to Iowa State to learn more.

"I wasn't sure if I wanted to go into plant or human genetics, but I wanted something that kept me in the Midwest. I knew if I went into a health-related field, I'd probably have to go to a coast to get a job," says Weeks, who is a

Science With Practice and the Agriculture Weekend Experience program are both supported by the Iowa State University Agricultural Endowment, a 70-year-old nonprofit corporation that provides opportunities for the College of Agriculture and Life Sciences to support students, people and infrastructure vital to the future of Iowa agriculture.

graduate student in genetics researching ear and tassel development in corn.

Weeks began researching corn as a junior in genetics when her lab supervisor gave her the chance to do hands-on research. She continued the research in the college's Science With Practice program, a course that links faculty mentors with students and provides research experience, credits and a paycheck.

"Science with Practice was great because it allowed me to become more autonomous," Weeks says. "I learned how to look at my results and decide the next step."

It didn't take long for Weeks to decide to continue her research as a graduate student.

"I graduated on May 5 and started graduate school on May 7. I wanted to get started right away," Weeks says. "This isn't work to me – it's what I want to do."

Agricultural markets also intrigued the Kansas City native. She thought farmers sold their grain as soon as it was harvested.

"When I moved to Iowa, I started listening to AM radio and heard about December and July corn. I was confused. I wanted to know how the markets work," Weeks says.

To find out, Weeks signed up for the college's Agriculture Weekend Experi-

ence (AWE) program last summer. The AWE program, which also was developed by the ISU Agricultural Endowment, gives students who have never been on a farm the chance to stay with an Iowa farm family and learn first-hand about farm life.

"I don't have any experience on a farm. Everything I do in the research field is done by hand and I've always wondered how it works on a large scale," Weeks says. "I want to work for a seed company someday and my goal is to design products that make it easier for the farmer. How will I know what they need if I don't know what they do?"

The AWE program, which is in its third year, was a great experience for Weeks. She was amazed by what she learned about farm management and economics in discussions with Don and Marylou Ahrens. The Ahrens, who live near Osage, hosted the AWE students in July.

"The key for succeeding in this field is to make things easier and more profitable for the farmer," Weeks says. "I felt it was important to learn how the farm works to gain a perspective and expand my vision for future corn improvements." ❧



Graduate student Becky Weeks wrote an essay about her experience in the AWE program. In it she reflects on agriculture and her future plans. Read Weeks's essay on-line at: www.ag.iastate.edu/stories.

FOR DAVID MANU

IT'S ALL ABOUT FOOD

By Barbara McBreen

WHEN DAVID MANU BECAME ILL IN HIGH SCHOOL with a disease that limited the kinds of food he could eat, he didn't realize he would later study food science looking for ways to help others.

"I was diagnosed with an ulcerative colitis as a sophomore and I couldn't eat high-fiber foods," Manu says. "Now I'm in food science and I can go into medicine or I can design foods that help others have a normal life."

Manu, a junior in food science and an ISU George Washington Carver Scholarship recipient, started learning how to conduct research this summer in the Microbial Food Safety Laboratory in the food science and human nutrition department. Aubrey Mendonca, associate professor in the department, is a mentor to Manu and oversees the research and students in the lab.

The research focuses on listeria, a foodborne pathogen that causes listeriosis. The disease affects pregnant women, newborns and adults with weakened immune systems. Listeria sickens about 2,500 and kills 500 people per year nationally.

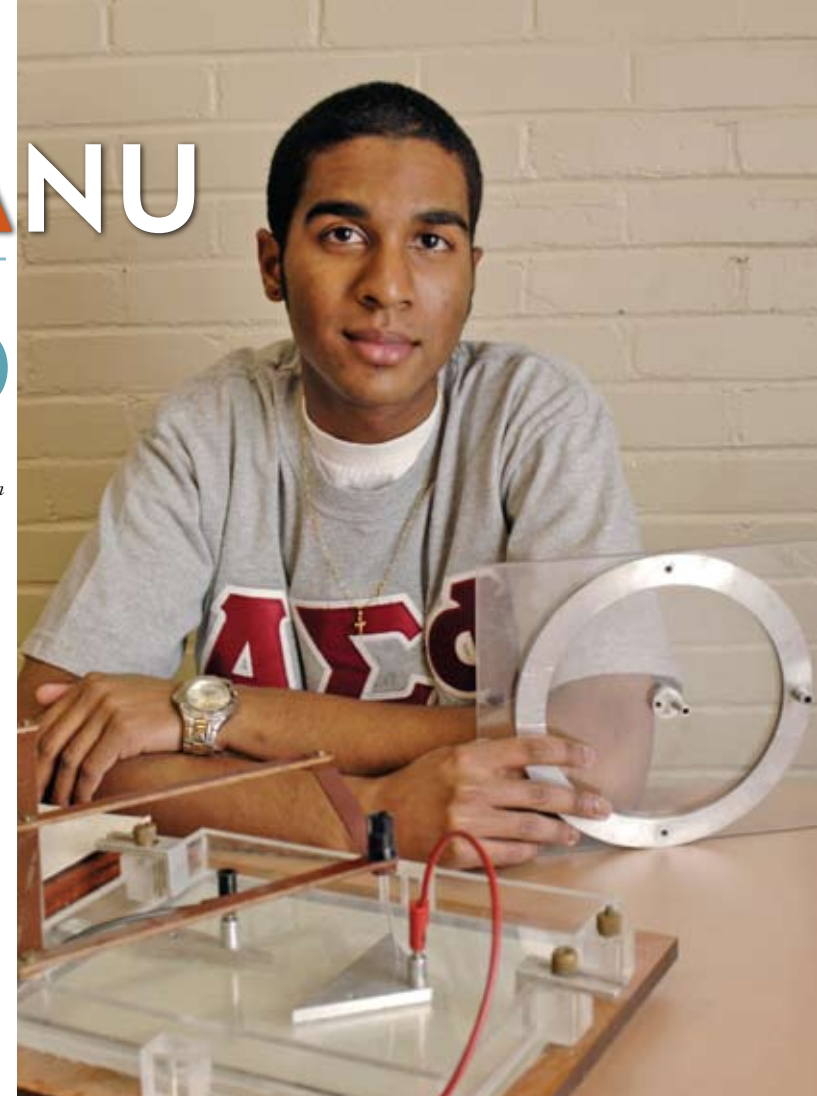
"I'm testing the types of ways to fight the bacteria," Manu says. "It's a new project and there hasn't been a lot of research on it. I enjoy it because there are surprises every day and you never know what results you'll get."

The research is focused on processed turkey and will provide recommendations for food processors to limit listeria contamination. Listeria bacteria can develop in turkey, deli meats, soft-ripened cheese, milk, undercooked chicken, uncooked hot dogs and shellfish.

"We use both chemical treatments and pressure to kill listeria," Manu says. "The high pressure compresses the cells and makes them burst, but the pressure only makes changes on a microbial level – it doesn't change the food. We are testing these two methods to find the best combination to kill the bacteria."

"David seems to like research a lot. Every moment he is not in class he comes to work in the laboratory," Mendonca says. "The whole idea has been to get him interested in graduate work. It can be hard for undergraduates because they have so many other classes and activities."

For now Manu says he plans to pursue a master's degree in food microbiology at Iowa State University and a doctorate degree somewhere in a warmer climate.



When David Manu signed up for a summer job in the Microbial Food Safety Laboratory, he thought he'd just be washing test tubes, but was glad to discover he'd play an active role in research.

MANU PLANS TO DESIGN FOODS TO IMPROVE HUMAN HEALTH

Manu was born in Ames. When he was two-months old, he and his family moved to Niamey, Niger, Africa, where they lived for seven years before coming back to the United States. As a young boy, Manu remembers interacting with animals in an African wildlife preserve. "I remember we were able to go up to the giraffes and pet them, take pictures and just hang out with them," Manu says.

Manu no longer has problems with colitis thanks to an experimental operation he chose to undergo rather than taking steroids for the rest of his life.

Manu hopes he can design foods that help others who have similar diseases. To do that he'd like to own a company or do research for a major food company. ❧

AN OUTRIGHT WINNER OF A WIMBLEDON INTERNSHIP

By Barbara McBreen

AS A FRESHMAN, JOE BOWSER knew he wanted to intern at Wimbledon. This summer his idea became reality. He became the first Iowa State student to intern for the legendary tennis club in London.

It wasn't easy getting to the All England Lawn Tennis and Croquet Club. It took two years for Bowser to work out the legal details so he could work in England.

Bowser, a senior in horticulture from Fort Dodge, Iowa, says he owes it all to Dave Minner, ISU horticulture professor.

"I thought that Wimbledon would be an interesting place to work and I asked Dave Minner, my turfgrass professor, if he knew of any possibilities to work there," Bowser says. "He had met Wimbledon's head groundsman and he gave me his e-mail address. I contacted him my freshman year and we worked on it for the next couple of years."



Bowser got a chance to groom the tennis greens for the greats, including Roger Federer (left).



Joe Bowser combined his love of tennis and turfgrass into a dream internship at Wimbledon.

Bowser found out that the daily goal at Wimbledon is perfection – especially when it came to working on the grass tennis courts. The grounds crew has to ensure the courts are flawless for the championship tournaments.

"I enjoyed working on the grounds during one of the most prestigious sporting events in the world," Bowser says. "I knew the work that I did directly affected the quality of play during the tournament."

Bowser helped maintain 41 grass tennis courts, clay courts, croquet greens and ornamental lawns. During the tournament, he watched from Centre Court ready to cover the courts in case of rain.

One of the highlights for Bowser was working during the tournament and getting his picture taken with Roger Federer, the eventual champion (and fifth consecutive winner).


"It was great. He was very nice

and he even autographed my photo," Bowser says.

Although Bowser didn't win any prize money, he won his supervisor's praise when he was invited to return to Wimbledon in 2008.

"They asked Joe if he could come back and they asked me if we could send more students like Joe," Minner says. "As always, the quality of students we get at Iowa State is evident in their work ethic."

Bowser isn't sure if he'll go abroad after graduation, but he's leaving his options open. He is sure that the Wimbledon internship was a great learning experience.

"I learned strategies that will help me succeed after I graduate," Bowser says. "I worked with different types of equipment which will be useful in my career as a sports turf manager." 

STUDENT ACHIEVEMENTS

WORLD FOOD PRIZE AWARDEES

Two students have been honored with World Food Prize awards for their work as Borlaug-Ruan International Interns – Emma Flemmig majoring in genetics and agriculture, and Rachael Cox majoring in agronomy.

TRUMAN SCHOLAR FINALIST

Clark Richardson, senior in agricultural business, was a finalist for the 2007 Truman Scholars. The scholarships are one of the most prestigious awarded to undergraduate students with only 70 awarded nationwide. In 2006, Amber Herman, a senior in public service and administration in agriculture, was named a Truman Scholar.

ALL-AMERICANS IN LIVESTOCK JUDGING

Animal science graduate students Justin Lain, of Corydon, and Kyle Schulte ('07 agricultural studies), of Norway, were selected as members of the 2006 All-American Livestock Judging Team.

DIGITAL ART NATIONAL AWARD WINNER

Horticulture and landscape architecture senior Grant Thompson won the Communications Honor Award in the American Society of Landscape Architects student competition. Thompson won for his digital art on campus project that uses web-based video and audio to feature the university's public art collection. Find a link to this project at www.ag.iastate.edu/stories.

AMERICAN SOCIETY OF ANIMAL SCIENCE HONORS

Elizabeth Karcher, doctoral student in animal science, received the Alltech Graduate Student Award; Lorilee Schultz, animal science senior and president of the Dairy Science Club, received the Genevieve Christian Undergraduate Student Award; and dairy science senior Jessica Tekippe was elected to president of the American Dairy Science Association student chapter.

GAMMA SIGMA DELTA RECOGNIZED

The national Gamma Sigma Delta organization presented the Iowa State chapter with one of five 2007 Silver Chapter awards. The award recognizes chapters that have done the most to promote the objectives of Gamma Sigma Delta on their campuses.

NATIONAL HONORS FOR STUDENT CLUBS

College of Agriculture and Life Sciences student clubs continue to earn national honors for their leadership, knowledge and creativity. Recent honors include:

Livestock Judging Team, fourth at National Barrow Show, sixth at the North American International Livestock Exposition and sixth at American Royal;

Food Science and Human Nutrition Team, second place, National Food Science Bowl;

Agricultural Systems Technology Club, second place, National Mechanization Competition;

Horticulture Teams, second and fifth place, Sports Turf Managers Association student challenge; and

Student subunit of American Fisheries Society named Most Active Student Subunit in North Central Division.

IOWA STATE UNIVERSITY College of Agriculture and Life Sciences

We're #1 ... Again!

Our student clubs compete nationally and win.

Agricultural Business Club - 2007 National Outstanding Chapter, National Creative Club Award from the American Agricultural Economics Association

Dairy Judging - First place, Sixth Annual North American Intercollegiate Dairy Challenge

Soil Judging - First place, 2007 American Society of Agronomy National Collegiate Soil Judging Contest

Crop Judging - First and second place in three North American Colleges and Teachers of Agriculture (NACTA) contests, First place in Ag Knowledge Quiz Bowl and Ag Computers Contest

American Society of Agriculture and Biological Engineers Student Club - First place in the Fountain Wars Design Competition

Animal Science Team - National Beef Bowl Champions

Farm Operations Club - National Landscape Design/Nursery Management Champions and National Sheep Livestock Specialist Champions



Ag Business Club

Soil Judging Team

A WIN-WIN SITUATION: NEW CROPS, NEW FUEL OPPORTUNITIES

By Susan Thompson

IT'S ESTIMATED BIOMASS FUELS currently provide just 3 percent of the energy used in the United States. Researchers at Iowa State University hope to change that.

Plants not routinely found on Iowa farms — switchgrass, big bluestem, sweet sorghum, triticale, kenaf — fill several research plots on an Iowa State farm west of Ames.

"Our primary goal is to provide realistic alternatives for Iowa producers to diversify their cropping systems," says Ken Moore, agronomy professor. But he's quick to point out this isn't just about developing alternative crops, it is also about developing valuable new uses for harvested materials.

Emerging markets for liquid fuels and other industrial products made from crop biomass offer new opportunities. "This requires development of an industrial market for these alternative biomass crops. In the end, the research should benefit not just producers, but also consumers and the alternative fuels industry," Moore says.

Lance Gibson, associate professor of agronomy, says the Iowa State researchers studying biomass crops have



Robert Anex examines a plot of hybrid sorghum-sudangrass. The plant is a high-yielding biomass crop that's being studied as a possible biomass source for the production of cellulosic ethanol.

current systems, protect the natural resource base and add diversity to the landscape and the economy," he says.

Several projects are underway to explore new crops and cropping systems that can help produce food and fuel while benefiting the environment. Others involved in the research with Moore and Gibson are Matt Liebman, agronomy professor and Henry A. Wallace Chair for Sustainable Agriculture, and Robert Anex, associate professor of agricultural and biosystems engineering and associate director of Iowa State's Bioeconomy Institute.

usually is grown for industrial fiber, but also is a potential biomass crop.

Several varieties of kenaf have been planted with the goal of identifying ones that yield optimal fiber quality and quantity. The fibers are evaluated for use in ethanol production and biocomposite materials. This research also involves studying the best management practices for growing kenaf in Iowa and an economic evaluation of the industrial use of kenaf and its by-products.

It's the third year for a project involving five sweet sorghum varieties and management practices. Once harvested, each variety is evaluated to determine how well it is suited for ethanol production.

This is the second year for a study of native warm-season perennial grasses that show promise for biomass production — switchgrass, Indiangrass, big bluestem and eastern gamagrass. Various management practices are being evaluated and samples collected to compare biomass production, carbon storage and nutrient use efficiency.

Miscanthus is another possibility. But so far, tests in Iowa have proven this crop to be difficult to establish, since young plants are sensitive to cold and dry soil. Another downside

is that it can take three to five years to establish this perennial, meaning a producer would have nothing to harvest for at least two years.

Alternative Crop Systems

Liebman, Anex, Moore and graduate student Andrew Heggenstaller are especially interested in evaluating how nutrients can be recovered from biorefineries as grass biomass is processed, and how those nutrients can be recycled to the fields where the perennial grasses grew. This nutrient recycling may eliminate or at least reduce the need for additional fertilizer inputs in biomass cropping systems.

A concern sometimes raised about the use of annual crops for biomass is that removing large amounts of crop residue from fields might lead to greater soil erosion, reduced soil fertility and increased need for commercial fertilizers.

"To address these challenges, we are investigating alternative cropping systems and associated management practices that might be used to generate large amounts of biomass feedstocks

while better protecting environmental quality," says Liebman.

"Our theory is that producing two crops in one year will generate more biomass at lower environmental cost," he says. With that in mind, a long-term crop rotation study that looks at the possibility of a double-crop sequence of winter and summer biomass crops is in its second year.

Triticale, a cross between wheat and rye, is planted in October and harvested for biomass the following June. This protects soil and water quality during winter and spring, when Iowa crop fields typically are barren.

Once the triticale is harvested, warm-season crops such as corn, sorghum-sudangrass and crotalaria, a legume that can fix large quantities of atmospheric nitrogen, are planted.

Decision-making Tools

Not only are the researchers focused on new crops and new cropping systems, they're also considering what decision-making assistance producers will need in this new era of agriculture.

To help farmers begin to understand how collecting biomass from their fields may affect soil fertility, erosion, energy needs, labor and the bottom line, Anex and others added bioeconomy elements to I-FARM, a Web tool that helps farmers simulate and plan various changes to their operations. The free tool focuses on the Midwest and Northeast with weather and soils data for 28 states accessible from its database. For a link to I-FARM visit www.ag.iastate.edu/stories.

Growing enthusiasm for biofuels has raised many questions about impacts on farmers' income and the environment. "The need to produce both food and fuel from farm land places new demands on the agricultural system," Anex says. "Yet biofuel demand also creates opportunities to develop new crops and cropping systems that provide new value to farmers while reducing environmental impacts."

As long as questions remain, Iowa State University researchers will continue their search for answers. ☺



Sorghum, kenaf, triticale and corn are among the crops being tested for biomass potential.

five guiding principles. "We're working to develop cropping systems that produce the most energy per acre per year, are energy efficient, meet food needs while producing more fuel than

Crop Options

This is the fourth year for a pair of projects evaluating kenaf varieties and production practices for Iowa. The crop



Agronomy faculty including Distinguished Professor Robert Horton (left) and Agronomy Department Chair Kendall Lamkey (second from left), discuss bioenergy crop trials with ISU President Gregory Geoffrey (far right).

NEW CENTURY FARM TO SHOWCASE BIOMASS PRODUCTION AND PROCESSING

By Susan Thompson

THE FIRST-IN-THE-NATION INTEGRATED RESEARCH and demonstration farm devoted to biomass production and processing is being created by Iowa State University. Construction of the ISU New Century Farm will get underway soon.

"This facility will give us the opportunity to integrate directly into agricultural fields the connections with harvesting, transportation, storage and processing," says Wendy Wintersteen, dean of the College of Agriculture and Life Sciences. "The New Century Farm will not only provide a venue for cutting-edge research, it also will allow us to educate the next generation of scientists in this critical growth area."

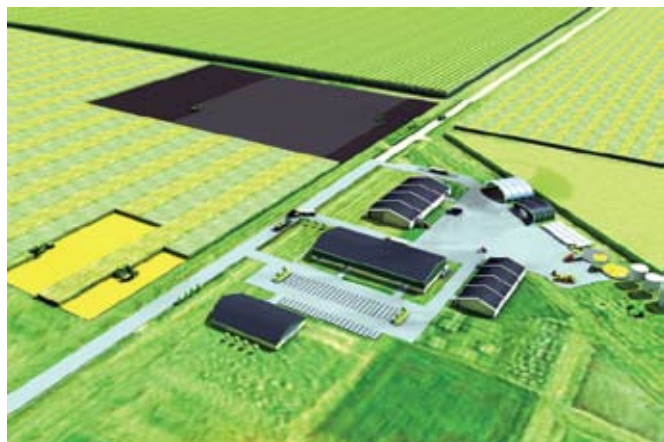
The site is the existing Agronomy and Agricultural and Biosystems Engineering Research Farm along Highway 30 west of Ames. It was selected for its rural setting, yet high visibility. The main biomass processing facility should be completed by fall 2008. Field, harvesting and storage research infrastructure will follow.

The facility is on a fast track. In March, the Board of Regents, State of Iowa, approved the planning phase of the project. In August, the board granted construction approval.

"The New Century Farm is an important addition to Iowa State's biorenewable facilities that link new discoveries, integration of science and real-world situations and preparation for commercialization," says Joe Colletti, senior associate dean in the College of Agriculture and Life Sciences. "The New Century Farm will strengthen ISU's portfolio that includes biorenewables facilities in ISU's Bioeconomy Institute, the College of Agriculture and Life Sciences and the Iowa Energy Center."



Officials are shown "breaking ground" for the New Century Farm at a virtual groundbreaking at Hilton Coliseum during ISU's 2007 Biobased Industry Outlook Conference on Nov. 5. From left to right: ISU Executive Vice President and Provost Elizabeth Hoffman, College of Agriculture and Life Sciences Dean Wendy Wintersteen, Chairman of Pioneer Dean Oestreich, Lt. Governor Patty Judge, ISU President Gregory Geoffroy and ISU Bioeconomy Institute Director Robert Brown.



The New Century Farm will be located west of Ames on existing ISU research farms.

Research at the 23,000-square-foot facility will address some of the most critical questions facing biorenewables. The New Century Farm will include harvesting, storing, transporting, handling and biomass processing facilities. Biomass crops destined for use as bioenergy and bioproducts will be grown onsite and at other area Iowa State research farms.

"The biomass processing facility will allow researchers to study systems to turn a variety of biomass materials into bio-oil or synthetic gas by using thermochemical technologies or into ethanol and industrial chemicals by fermentation," says Larry Johnson, director of the Center for Crops Utilization Research. "This facility will allow Iowa State researchers and industry partners to test and demonstrate processing system technologies before going commercial."

Planners say the New Century Farm will incorporate four key components. Those are:

- Research that brings together scientific expertise to address biomass cropping systems, biofuel and bioproduct processing, logistics of biomass supply and positive environmental effects such as recycling nutrients back to the land.
- Teaching that serves as a laboratory and resource for educating future scientists, producers and extension experts.
- Extension that demonstrates economic, social and environmental viability of biorenewable energy and bioproducts production to producers, policymakers and the public.
- Outreach with companies that will work with Iowa State in collaborative research and development.

The project costs are estimated at \$19 million with funds coming from state, federal and private sources. In September, DuPont pledged a \$1 million commitment to ISU for development of the New Century Farm. ⑤

IN BIORENEWABLES POLICY, HART'S CONSIDERED AN MVE—MOST VALUABLE ECONOMIST

By Sandra Clarke

DON'T LET THE casual attire fool you. He may wear shorts and tennis shoes most days of the year, but Chad Hart's telephone number is on the speed dial of a number of congressional staffers, commodity group leaders and local and national reporters. When it comes to agricultural policy, he's all business.

Hart came to Iowa State University to get a doctorate in economics and statistics after completing a bachelor's in economics at Southwest Missouri State. The Center for Agricultural and Rural Development (CARD) hired him as a graduate research assistant for data crunching on many projects and capitalized on his ability to write econometric computer programs. Once Hart had his doctorate, CARD director Bruce Babcock offered him a staff position.

"Chad has made countless contributions to CARD and the university," says Babcock. "He has earned a reputation as one of maybe a dozen agricultural economists in the United States who really understand U.S. agricultural policy."

Hart's significant contributions were recognized

this year by professional and scientific staff excellence awards from the College of Agriculture and Life Sciences and the Iowa Board of Regents.

For the past seven years, Hart has studied the efficiency of agricultural policy and crop insurance. He has briefed congressional staff, the U.S. Department of Agriculture and the Congressional Budget Office. And he has created several innovative Web-based tools for producers to aid in their decisions about risk management.

The first tool was a Loan Deficiency Payment calculator. A new tool still under development provides basis maps updated daily, so Midwest farmers can track prices of corn and soybeans at various delivery points. See www.ag.iastate.edu/stories for a link.

In 2006, amid swirling questions about booming ethanol production, Hart stepped up to lead a new Biorenewables Policy Division. "I needed an excellent economist who knows Iowa and U.S. agriculture," says Babcock, "and who is careful, honest and can present well about the topic. Chad meets all of those criteria."

Hart says, "the Biorenewables Policy Division has already produced two pivotal studies on the effects of emerging biofuels on traditional commodities and on food and feed prices. The research has produced some of the earliest and most influential projections so far in measuring the impact biorenewables will have

in a dress shirt, slacks and tie, something that usually provokes a few doubletakes and comments from his workmates. They know, though, that as soon as the presentation is over, Hart will settle comfortably in front of his computer in his Cardinals baseball cap, tie back on its hook, ready when needed. ⑤



Chad Hart is making major league contributions on biorenewable risk management and economics.

on agriculture."

As a result of these initial efforts, Hart's dance card is quite full: he responds to countless calls from the press and to many presentation requests.

Which means he sometimes comes into the office

ANIMAL AGRICULTURE IN A BIOFUEL WORLD By John Lawrence

THE RAPIDLY EMERGING RENEWABLE ENERGY industry has generated a lot of excitement in rural America. Ethanol plants, biodiesel refineries and wind farms are sprouting across the heartland as fast as investment bankers and pipefitters will allow.

These renewable energy facilities are welcome additions to many Iowa communities, some of which haven't had a new employer since Prohibition. Corn and soybean prices have increased dramatically and are forecast to remain well above historic averages. Land prices increased 20 percent in the last year, setting new record high prices and land rents have also risen, with increases of 25 to 40 percent commonly reported.

All in all, we are poised to make the Midwest to biofuels what the Mideast is to oil. Think sheiks in seed caps.

While the new wealth and employment from biorenewables is exciting, it is important to keep it in perspective and in balance with what else Iowa does extremely well — animal agriculture. In 2006, 55 percent of Iowa's agricultural cash receipts came from animals and their products.

These farmers have seen their largest single input cost — feed — increase dramatically in the past year. Many Iowa livestock and poultry farmers also are grain producers. They support expanding biofuel production. At the same time, they have questions about the future.

THESE EXAMPLES ILLUSTRATE HOW ANIMAL AGRICULTURE AND BIOFUELS NOT ONLY COEXIST, BUT COMPLEMENT EACH OTHER.

Rural communities should take notice. While modern animal agriculture takes a significant capital investment and is automated, it's still labor intensive. It takes more jobs to feed animals than it does to make ethanol. Feeding hogs or cattle uses four times more labor per bushel of corn "processed" as does an ethanol plant. More labor-intensive enterprises like farrow-to-finish hogs use 10 times more labor per bushel than does ethanol and, at the extreme, milking cows uses over 100 times more labor per bushel of corn consumed.

In addition to jobs on the farms, there are even more Iowa jobs working to process value-added meat, milk and egg products for the rest of the world.

So, while animal agriculture may not be as exciting as the renewable energy revolution, it's clearly an essential part of Iowa's economy and national food security. And while competing for the same feedstock at one level, animal agriculture and biofuels are synergistic on other levels.

Take ethanol production. The competition is for calories. Starch in the corn is removed to make ethanol. Starch also is the major source of calories for livestock and poultry. The ethanol co-product, distillers grains and solubles, or DGS, is relatively high in protein and fat, but has no starch. DGS can replace some protein and calorie sources in a ration,

but livestock and poultry still need grain in their diets. Capturing value from DGS is important to ethanol plant profitability; a viable livestock and poultry sector is the best way to do so.

Biodiesel in Iowa is derived from crushing soybeans to produce soybean oil and soybean meal. The meal is the preferred protein source for hog and poultry diets. The fat from livestock also can be refined into biodiesel. The co-product of biodiesel production is glycerol, which can be fed to animals to replace some calories. Thus, biodiesel and livestock and poultry feeding complement each other well.


Another often overlooked aspect is the price of commercial fertilizer. Between 2002 and 2007, nitrogen prices more than doubled and phosphorous and potash prices increased 70 percent. Manure nutrients from livestock and poultry can replace some or the entire crop nutrient needs when properly managed. It is recycling of a renewable resource even if the crop produced goes to fuel rather than feed.

Still others are exploring methane, a direct link between animal manure and renewable energy. Feedlots and dairies are pursuing "closed loop" systems where DGS is fed to cattle and manure is converted to methane to power ethanol production.

These examples illustrate how animal agriculture and biofuels not only coexist, but complement each other. Yet many people talk of a "new" bioeconomy — one based on efficient processing of grain to biofuels and producing cellulosic ethanol to change the landscape to more perennials.

Few people picture a bioeconomy that includes biofuels and animal agriculture. This integrated bioeconomy needs a strong research foundation and visionary leadership to become a reality. The research has to be more than figuring out how to feed higher levels of DGS to livestock and poultry, and the leadership has to be more than building more biofuel plants.

For a true bioeconomy, examples of successful integrated systems are needed. The New Century Farm at Iowa State University will be a good place to start. While much of the research will evaluate energy crops, harvesting and processing methods and environmental implications of a biofuel landscape, systems that include animal agriculture with energy production and nutrient recycling from manure will provide a truer picture of an integrated bioeconomy.

Our thinking, actions and investments must move beyond what we have done in the past to what's possible in the future. The opportunities exist. The challenge is finding the balance that produces fuel, feed and food to the benefit of Iowa, the nation and the world. 

John Lawrence ('84 animal science, MS '86 economics) is a professor of economics, an extension livestock economist and director of The Iowa Beef Center at ISU.



Agricultural and Biosystems Building Complex • Fundraising

for the new agricultural and biosystems facility was kicked off last September with a \$5 million commitment from Iowa State alumnus Virgil Elings. In addition, John Deere Foundation, the primary philanthropic arm of Deere & Company, committed \$1.25 million. The facility is part of a planned three-building, 166,000-square-foot complex. The complex will replace outdated laboratories, classrooms and offices. The building is part of a planned multi-structure complex that will include ISU's Bioeconomy Institute. Total cost of the complex is estimated at \$63.3 million, with \$12 million to come from private support. The university will request the remaining funding from the Iowa Legislature. Once funding is secured, construction will begin at a site near Howe Hall on campus.

LEADING RESEARCH IN BIO-ECONOMY CO-PRODUCTS

For more than two decades, Iowa State University faculty in animal science have led the way nationally on research on the use of corn milling co-products (such as distillers grains) in livestock rations. Allen Trenkle, Emeritus Charles F. Curtiss Distinguished Professor in Agriculture, continues to be a national expert in this area, and is one of several conducting research and extension programs in this important intersection between the bioeconomy and Iowa's leading livestock industry.

CULVER SIGNS POWER FUND BILL AT CCUR

In May, Iowa Governor Chet Culver chose the college's Center for Crops Utilization Research as the site to officially sign one of the key bills passed by the 2007 Iowa Legislature. Culver signed the Iowa Power Fund bill, which created a \$100 million fund to pay for projects that advance the development and commercialization of biorenewable fuels and products, as well as projects related to energy conservation. Research institutions like ISU, businesses and other organizations will be eligible to apply for the funds. The Center for Crops Utilization is a research, development and technology transfer program that is focused on adding value to Midwest crops, biorenewables development, the application of biotechnology to increase value and technology transfer to the private sector.

BILL NORTHEY SHARES THE STORY OF AGRICULTURE

By Melea Reicks Licht

FOR IOWA SECRETARY OF Agriculture Bill Northey, the most challenging part of his job is switching hats.

Literally and figuratively.

Between a recent tour of a limestone mine near Ames and a presentation to the Iowa Food Producers' Association, he traded his hard hat and reflective vest for a sport coat and leather portfolio.

"The challenge is really diving into one issue so completely then switching to a completely different one," says Northey.

After sharing insights from his recent trip to Cuba with the producers' association, he met with a group at a community college then hopped into the cab of his combine on his northwest Iowa farm near Spirit Lake to get out the last of his bean crop.

A fourth generation farmer, Northey began his term as secretary in January 2007. He started farming with his grandfather after graduating from Iowa State University with a bachelor's degree in agricultural business in 1981. He earned a master's in business administration from Southwest Minnesota State University in 2004. He has served as a leader for farm groups including a term as president of the National Corn Growers Association, and a number of Farm Bureau offices at the county and state level.

As of October, Northey had visited 85 Iowa counties since taking office and looks forward to visiting the remainder of counties after harvest. He says the topics raised at community visits vary greatly but have included dairy, livestock facilities, conservation efforts, farmers' markets and most often, ethanol.

He admits ethanol production lately has led to competition for grain for feeding livestock, but believes



Secretary Northey (left) is shown approximately 220 feet underground touring Martin Marietta Mines near Ames. Plant manager Doug Robey explains how switching to soy B99 biodiesel two years ago has improved air quality in the mines. As secretary of agriculture, Northey oversees the state's mines and minerals bureau.



Northey was a leader in the FarmHouse fraternity while at ISU.

the two industries will come to complement one another.

"There will be bumps in the road, but we can work through those issues through feeding dried distillers grain and building new livestock facilities in the right way and in the right places," Northey says.

Northey's agenda for Iowa agriculture includes promoting renewable energy, conservation and stewardship and the industry of agriculture.

"One of the most important things we need to do is to tell our story to those unfamiliar with agriculture," Northey says.

In addition to promoting agriculture

in the state, he says those involved in agriculture need to allow themselves to be optimistic for the future.

"This is a wonderful and exciting time in agriculture. Our industry is growing. Our crops are more valuable than ever and all segments of the livestock industry are growing," Northey says. "The negative tone that was set in agriculture in the 1980s is finally beginning to lift and we're starting to see some attitude change."

Citing increased enrollment in the College of Agriculture and Life Sciences and in community college agriculture programs, Northey claims young people are starting to see the opportunities.

"Kids are starting to get it — our challenge is basically not to talk them out of it," Northey says. "We need to allow ourselves to be just as optimistic as the young folks." **S**

LEOPOLD ADVOCATES FOR THE ENVIRONMENT

By Melea Reicks Licht

SINCE OPINIONS ABOUT natural resources are formed between the ages of four and 14, Rich Leopold, ISU alum and director of the Iowa Department of Natural Resources, expresses valid concerns about the interaction of today's youth with nature. Or rather, the lack thereof.

"There is a growing urbanization happening to our youth," Leopold says. "Many kids have never played in a creek or picked wildflowers. We need to bring our children back to the wild."

Leopold draws upon his own experiences with nature as he oversees a department with a budget of more than \$200 million and more than 1,200 employees charged with leading Iowans in caring for natural resources.

"We are the agency that advocates for the environment and we do so unapologetically," he says. "Our people are with the

ogy from Minnesota State University in 1995 and his master's degree in animal ecology from ISU in 2005. His previous position as executive director of the Iowa Environmental Council gave him extensive experience working with government officials and building relationships with stakeholders.

Since his appointment by Governor Chet Culver in January, Leopold has found a large part of his job to be communicating and building mutual trust.

"The environment and agriculture sometimes get played against each other, but I don't buy it," he says. "Most farmers I meet are great environmentalists, even if they don't appreciate the term. 'Conservationists' is probably a better term."

Leopold believes the two sides agree on 95 percent of issues, but the remaining five percent get the majority of attention, such

"... WE NEED TO BRING OUR CHILDREN BACK TO THE WILD."

DNR because they believe in their work. As a result, our ratio of employees to impact is phenomenal."

Leopold has worked in various forestry and environmental agencies from coast to coast. He received his associate's degree in natural resources technology from Central Lakes College in 1985, bachelor's in biol-

as issues of local control and air quality surrounding livestock confinements.

"There are really two sets of problems in this area — the real problems and the perceived problems," Leopold says. "I'm asking industry to help with the real problem and I'll deal with the perceived problem."

Leopold believes his



Leopold poses outside the Story County Conservation Center. As the director of the Iowa DNR, he hopes to reintroduce young people to nature.

agency has made great strides in improving water quality in Iowa and it will continue to focus on those efforts.

He expects future challenges for the agency will surface as demand for ethanol increases the number of acres converted from the Conservation Reserve Program to corn production and increases the demand for water used in biorefineries.

Leopold has hope to lure young people back to nature through destination state parks with features like water parks and outdoor experiences including boating,

swimming and hiking. One such example is the Honey Creek Resort State Park at Lake Rathbun in south-central Iowa scheduled to open in summer 2008.

Leopold also is encouraged by the overall public attitude regarding the value of natural resources in quality of life.

"Today people move where they want to live then find jobs. They look for culture, education and recreation," Leopold says. "Iowa is one of the best places on the planet in terms of soil, water and air quality, so natural resources are a huge part of economic development." **S**



IOWA STATE FAMILY ENJOYS GREEN PASTURES

Dave and Pam Bolin (far right) are shown with their son Matthew, his wife Ashley and their grandson Noah on their family farm near Clarksville, Iowa.

By Melea Reicks Licht

SOME FAMILIES BLEED CARDINAL AND GOLD. For the Bolin family of Clarksville, Iowa, it may be more accurate to say their cows milk cardinal and gold.

Dave and Pam Bolin attended Iowa State to study dairy production. Two of their three sons have degrees in dairy science from ISU. In 2007 the family was honored by the ISU Dairy Science Club with the Honorary Member Award.

Their farm, Beaver Creek Farms, has been in the Bolin family since 1890. Currently their operation has about 70 milking cows and 60 heifers.

Pam is active in dairy organizations, serves on the Dean's Advisory Council for the College of Agriculture and Life Sci-

ences and is board president of Swiss Valley Farms, the 16th largest cooperative in the U.S. with 1,000 member farms, 500 of which are in Iowa.

“WE ARE IN THIS BUSINESS BECAUSE WE LIKE ANIMALS ...”

Pam is nonchalant when she talks about being the first female president of a major dairy cooperative in the U.S.

“As the mother of three sons I’m used to communicating with guys,” Pam says. “The cooperative doesn’t see me as male or female, they see me as what’s best for the membership.”

As part of their twice-a-day milking operation, the Bolins incorporate innovative recycling efforts, like grinding newspapers to use as bedding, for the health of their cows and their land.

“Being on a family farm, we are always concerned about how the land and the cows are treated because it is our livelihood,” Pam says. “We are in this business because we like animals – that’s something you see from generation to generation.”

Both Dave (’79 dairy science) and Pam prefer to work outdoors, so they split the milking, chores and record-keeping responsibilities. Dave took over the farm at age 13, and his parents and sister Barb (’84 dairy science) oversaw the operation while he attended Iowa State. He and Pam returned to the farm after he completed his degree. Dave has been active in Farm Bureau, the local school board, the Dairy Herd Improvement Association and has served as a district representative for Swiss Valley Farms.

Their oldest son Matthew is using his degree (’03 dairy science) from Iowa State in his work as an independent dairy nutritionist in Iowa and Minnesota. He and his wife Ashley have one son, Noah. Ashley is a stay-at-home mom and an independent consultant for Pampered Chef.

Dan, their middle son, also has a bachelor’s from Iowa State (’06 dairy science). He and his wife Lynn live in Ames, where he is an independent carpentry contractor and she is the operations director for an inflatable game entertainment company.

The youngest Bolin son, James, is currently a senior at the same Bible college his mother attended, Crossroads College, in Rochester, Minn. He is majoring in sports ministry and hopes to pursue a career in coaching or youth sports programs.

While Pam didn’t graduate from Iowa State, she took courses as Dave completed his senior year. She had attended Crossroads, but wanted to build upon her own dairy background with agriculture courses from ISU.

Pam and Dave look forward to seeing their farm through the next generation of Bolins. ⑤

DILLMAN DIALS INTO PUBLIC OPINION

By Melea Reicks Licht

DON’T HANG UP THE phone just yet.

That person on the other end

of the line asking you to answer a few questions may have your community’s best interests in mind – just like Don Dillman, ISU alum and pioneer of telephone, mail and Internet survey methodology.

Dillman believes surveys are essential tools in community development.

“The sample survey is an enormously useful tool in rural communities,” Dillman says. “In rural America there are fewer and fewer data sets. Sample surveys provide community leaders and policy makers the information they need to encourage successful development.”

Dillman is a Regents Professor and the Thomas S. Foley Distinguished Professor of Government and Public Policy in the Economic Sciences Research Center in the Department of Sociology and Community and Rural Sociology at Washington State University.

Asking Dillman to choose his favorite survey method is like asking him which child he loves more.

Even in this day and age of information technology, he says telephone and mail surveys are still preferable for certain situations, as are Web surveys.

“Each mode has its strengths and weaknesses. One has to understand them all and tailor the mode and

design to each situation,” Dillman says. “That’s why I refer to this as the ‘Mixed Mode Era.’”

Dillman entered ISU as an agronomy major in 1959, but after an introductory sociology course and six months in Poland with The International Farm Youth Exchange, he discovered he was fascinated with human behavior. Sociology faculty encouraged him to pursue his graduate education and he eventually earned three degrees from Iowa State – a bachelor’s in agronomy in 1964, a master’s in rural sociology in 1966 and a doctorate in sociology in 1969.

Dillman performed his first telephone survey while working in “The Shop” in the ISU sociology department. Dillman says that was among the first telephone public opinion surveys ever conducted.

“George Beal asked us to do a telephone survey to find out why an Ames bond issue was defeated,” Dillman says. “At the time there were only maybe four peer-reviewed articles on that type of research. Today there are over 4,000. For us in The Shop, this wasn’t any different from picking up other new methodologies and technologies and trying to make them work.”

Conducting that one telephone survey made Dillman the most experienced at conducting telephone surveys on the Washington State



Don Dillman, ISU alum, is a noted expert in survey methodologies. He sees surveys as integral tools in community development.

University campus when he arrived as an assistant professor in 1969. He became the founding coordinator of the University’s Public Opinion Laboratory, one of the first in the world to rely on telephone methods.

He later served as director of the university’s Social and Economic Research Center and chair of the Department of Rural Sociology. Dillman also worked as the senior survey methodologist at the U.S. Census Bureau, where he provided leadership for redesigning data collection procedures used in the 2000 Census.

Dillman’s research and work in policy development have made him an internationally cited expert in the area of mail, telephone and Internet survey methodology. In fact, he wrote the book on the subject, as well as a few others, and

plans to release the third edition next year under the title *Web, Paper and Mixed-Mode Surveys*. ⑤

“THE SHOP”

Don Dillman received his graduate training in what was affectionately called “The Shop,” a term that referred to the cadre of graduate students supervised by George Beal and Joe Bohlen from approximately 1955 to 1980 in the Department of Sociology. Shop members included Gerald Klonglan and Richard Warren who carried on The Shop with their own graduate students after they became faculty along with Charles Mulford. Everett Rogers, Ron Powers, Daryl Hobbs, Larry Kasperbauer, Quentin Jenkins and Rex Warland are just a few of the sociology notables educated in The Shop.

ALUMNI NEWS IN BRIEF

The ISU Alumni Association presented its 2007 honors and awards at Homecoming in October. Several college alumni were among those honored:

Eric J. Hentges (PhD '84 animal nutrition), Alexandria, Va., Alumni Merit Award;

John Ringkob ('97 agricultural business), Highlands Ranch, Colo., James A. Hopson Alumni Volunteer Award;

Lyle Campbell ('66 agricultural business) and Nancy Campbell, Paradise Valley, Ariz., Impact Award; and

Craig Beer ('50 agricultural engineering, MS '57, PhD '62) and Janet Beer, Ames, Iowa, National Service Award.

Awards presented to alumni by the College of Agriculture and Life Sciences included:



Terry EuClaire Meyer (PhD '87 molecular, cellular and developmental biology; PhD '87 biochemistry and biophysics), Urbandale, Iowa, Floyd Andre Award



Duane C. Acker ('52 animal science, MS '53 animal nutrition), Atlantic, Iowa, George Washington Carver Distinguished Service Award



Harlan D. Ritchie ('57 animal and dairy science) Okemos, Mich., Henry A. Wallace Award

COLLEGE TAILGATE DRAWS A CROWD

About 300 alumni, retired and current faculty and friends attended the college tailgate before the Iowa State and University of Northern Iowa football game this fall. Iowa Secretary of Agriculture and alumnus Bill Northey ('81 agricultural business) and Dean Wendy Wintersteen (PhD '88 entomology) spoke at the tailgate, which included a meal grilled by the agricultural systems technology club members and ice cream made by the dairy science club. Those attending received T-shirts decorated with the college's new name and sesquicentennial observance. The college's development office coordinated the event.

HEAD OF CATTLEMEN'S GROUP

Alumnus Bruce Berven is currently serving as the Iowa Cattlemen's Association executive vice president and executive vice president of the Iowa Cattlemen's Foundation, Inc. Berven is returning to the job at ICA, having previously held the position from

1978 to 1984, after serving for eight years as an Iowa State county extension director and area livestock specialist. He earned a bachelor's and master's degrees in animal science in 1970 and 1973 from Iowa State.

NEW PORK PRODUCERS PRESIDENT

Alumnus Scott Tapper, the president of the Iowa Pork Producers Association, earned a bachelor's degree in farm operations from Iowa State in 1979 and farms near Webster City. Tapper also is a member of the College of Agriculture and Life Sciences advisory council and the dean's executive council.

NATIONAL HUNGER FELLOWSHIP RECIPIENT

Amber Herman, who graduated in public service and administration in agriculture in December, was one of 20 chosen to serve as a Bill Emerson National Hunger Fellow with the Congressional Hunger Center for 2007-08. The 14th class of fellows trained in Washington D.C. before doing

anti-hunger work in communities across the country.

NATIONAL BIODIESEL BOARD TREASURER

College alumnus Ed Ulch, a director for the Iowa Soybean Association (ISA) from Solon, has been elected treasurer of the National Biodiesel Board. Ulch represents the Iowa Soybean Association on the National Biodiesel Board (NBB). He has served on NBB's governing board for three years and was a director for the Iowa Soybean Promotion Board from 2000-05. He has been an ISA director since 2005. Ulch earned a bachelor's degree in agricultural business in 1968.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE FELLOW

Alumna Karen Kuenzel Moldenhauer has been named a fellow of the American Association for the Advancement of Science. Moldenhauer, the University of Arkansas rice industry chair for variety development, joined the faculty of the university in 1982. She works

at the Rice Research and Extension Center near Stuttgart and was selected as a fellow in the academy section on agriculture, food and renewable resources. Moldenhauer earned a doctorate in plant breeding from Iowa State in 1975.

AGRICULTURAL ADVISER IN IRAQ

Randy Frescoln, director of the U.S. Department of Agriculture Rural Development Business-Cooperative Program in Iowa, served on a provincial reconstruction team in Iraq as an agricultural adviser. Frescoln served as an adviser during 2004 in Afghanistan. He earned a master's of agriculture in May 2006 and a bachelor's degree in farm operations in 1978.



Louis Thompson served as associate dean of academic programs for the college for 25 years.

LOUIS THOMPSON SURVEYS HIS CARDS. There's been a brief interruption in a bridge game with his former students and colleagues. The retirees have settled back into the game after a power outage in the Thompson home, which sparked a discussion about their early memories of electricity. With the breaker restored, they regain their focus on the game. Underlying the competitive nature of the game are friendships that date back

long before Thompson retired from Iowa State University in 1983. "HE WAS AN EXCELLENT TEACHER WHO INSPIRED AND MOTIVATED ME ..."

Let's lay our cards on the table: Thompson is a legendary figure in Iowa State's agricultural history.

Thompson joined the agronomy department at Iowa State in 1946 as a teaching assistant and joined the faculty in 1947 as an assistant professor. He earned a master's and doctorate in soil fertility and became a professor of agronomy and professor in charge of farm operations in 1950.

He is often remembered for his visits to the homes of undergraduates in the farm operations program. He credits the idea to one of his own teachers.

"When I was in high school the only person who ever visited my home was the ag teacher. That made such an impression on me that whenever I got a chance I would visit my incoming students at home," Thompson says.

Thompson was promoted to associate dean of academic programs for the College of Agriculture in 1958. He served in the position until his

retirement 25 years later.

Thompson's bridge partners include agronomy emeriti professors Ken Larson and Brent Pearce. Howard Johnson, emeritus professor and former chair of the agricultural engineering department, rounds out their bimonthly matchup.

Larson traces his career as an agronomist back to the first introductory agronomy course he took from Thompson.

"He was an excellent teacher who inspired and motivated me to pursue my interest in agronomy at the graduate level," Larson says. "It was a unique privilege to take over as associate dean of academic programs after Dr. Thompson retired. He always inspired me to keep students' best interests in mind."

In addition to his bridge partners, Thompson taught many other students who became prominent alumni, including John Pesek, a former student of his who attended Texas A&M. Thompson recommended Pesek for the Iowa State agronomy faculty.

Thompson received numerous awards for excellence in teaching, research and distinguished service. He says his atten-

tive teaching style helped students learn.

"I could tell by watching the students, by seeing the understanding in their eyes," Thompson says. "If they weren't listening, they weren't interested. And they weren't learning."

Undergraduate education was so important to Thompson that he established ISU's Louis Thompson Distinguished Undergraduate Teaching Award for faculty excellence in undergraduate teaching and advising. There also are agronomy and study abroad scholarships that bear Thompson's name.

When Thompson retired in 1983 he began a second career as a research climatologist. He made an exceptional prediction of the drought in 1988 based on his research on the relationship between drought in the Corn Belt and El Niños. The prediction led to scores of

invited presentations that kept Thompson busy until just days before his eighty-first birthday when he decided to begin a more traditional retirement.

Today, at 93, Thompson is an active philanthropist, stays current on the latest climatology news and enjoys visiting with his friends and colleagues. Especially over a good game of bridge. ♠



Brent Pearce, Louis Thompson, Ken Larson and Howard Johnson play a bimonthly bridge game.

PASSIONATE FOR PRIDE AND PURPOSE

By Melea Reicks Licht



When it comes to rallying support for the college, Dave Tierney is a straight shooter.

SOMETIMES DAVE Tierney wonders what his future might have been like had he not chosen to attend Iowa State University. Looking back, he says attending ISU was one of the best decisions he made in his life.

He is quick to point out it was second only to marrying his wife, Carol.

As chair of the College of Agriculture and Life Sciences Campaign Committee, Tierney gets to share his enthusiasm for ISU with alumni and friends as the university undertakes an historic fundraising effort, "Campaign Iowa State: With Pride and Purpose."

"Everyone can find their own way to be a part of the campaign," Tierney says.



College of Agriculture and Life Sciences Priorities

Students – \$35 million

Faculty – \$32 million

Programs – \$61 million

Facilities – \$27 million

Total – \$155 million

Find out more about the campaign at www.ag.iastate.edu/stories.

"It's important to ask, 'How can I help?' It's not always about money. It's about time and money."

Tierney found his way to contribute to the leadership of the campaign through his passion for Iowa State University and agriculture. He credits his company for allowing him the opportunity to get involved in previous ISU campaigns through the Iowa Seed Association.

For over 20 years Tierney has worked in the ag industry. As a lobbyist for Monsanto Tierney informs state and local government officials in the upper Midwest on modern agriculture. He says his 1985 bachelor's degree in public service and administration in agriculture was a perfect fit for his position in government affairs.

Tierney says he jumped at the chance to chair the college's campaign committee based on his positive experiences in two other ISU campaigns and through his service on the board of the Committee for Agricultural Development, a nonprofit organization affiliated with Iowa State that has supported university agricultural research since 1943.

"I'm honored to be a part of such a great team of alumni and Iowa State University Foundation

employees," Tierney says. "Everybody on the committee contributes something different. That's what's really exciting about this group."

The College of Agriculture and Life Sciences seeks \$155 million in private funding through Campaign Iowa State. According to Dean Wendy Wintersteen, the funding will be used to fulfill the college's mission and extend and redefine it for the 21st century.

"These investments will be used to prepare future leaders to meet some of our greatest challenges, attract world-class teachers and researchers and generate science-based information to address the needs of society," Wintersteen says.

Tierney believes the committee is off to a good start, and the numbers back him up. The college has reached the halfway point.

"We've had some great alumni and corporate support, but I think the hard part is ahead of us," Tierney says. "People need to think how important ISU is to them and how much individual success they contribute to the university."

He encourages alumni to ask themselves, "What do I

want my legacy to be?"

The Tierneys have other ties to Iowa State. Carol works for ISU Extension Youth and 4-H. Dave and Carol's daughter, Kristin, is a junior in elementary education at Iowa State. Their second child, Ryan, is a senior at Ames High and is still deciding where to go to college. Dave and Carol's fingers are crossed that Ryan will find his own path to Iowa State. ⑤

COLLEGE OF AGRICULTURE AND LIFE SCIENCES CAMPAIGN COMMITTEE

Dave Tierney, *chair*
(85 public service and admin. in ag)

Peg Armstrong-Gustafson
(81 animal science)

Mark Batchelder
(95 liberal studies)

John Clarke, III
(PhD '88 entomology)

Nancy Degner
(72 food science)

Tim Fevold
(82 agricultural business)

Jim Frevert
(60 farm operations)

Thomas Hughes
(02 horticulture)

Marv Walter
(62 animal science, MS '64 animal science)

KINZE MANUFACTURING PROF PREPARES FOR THE FUTURE OF AG MACHINERY

By Melea Reicks Licht

STUART BIRRELL SEES great potential for biorenewable energy, but only if research and development can bring together the two ends of the biomass production chain and today's students are equipped with the knowledge to lead the industry in emerging technology.

As the newly named Kinze Manufacturing Professor in Agricultural and Biosystems Engineering, Birrell hopes to do just that by developing and teaching systems that are sustainable, profitable and allow farmers to complete field work in a timely manner.

The professorship was created by the founders and owners of KINZE Manufacturing Inc., of Williamsburg, Iowa, Jon and Marcia Kinzenbaw. It will be funded by annual gifts from the Kinzenbaws over a three-year period. KINZE Manufacturing is one of the largest privately held agricultural equipment manufacturers in the United States, designing and building innovative row crop planters and grain wagons.

According to Jon Kinzenbaw, "Iowa State University is a leader in agricultural engineering education. Providing a professorship to faculty at Iowa State in agricultural machinery will further enhance the machinery

industry. These faculty also will have an impact on the students they teach, helping them deepen their passion for agriculture."

Birrell plans to use the professorship to support student activities and develop new laboratories to better prepare students for entering the machinery industry.

"I hope my research and teaching efforts supported by the Kinze Professorship will enhance the traditional strengths of graduates, who are well versed in agricultural machinery design, with education and training in advanced technologies that will be integrated into future machinery systems," Birrell says. "This will be important to maintain the U.S. and Iowa's agricultural and construction machinery industry competitive advantage in the world market."

His busy teaching schedule includes graduate and undergraduate courses in agricultural engineering and agricultural systems technology, with a focus on power and machinery engineering courses.

Birrell's students will undoubtedly benefit as he seeks to fill the gaps in biomass research through the development of sensors and controls for agricultural machinery operation and



Kinze Manufacturing Professor Stuart Birrell researches and teaches new developments in biomass harvesting.

BIRRELL WILL USE HIS PROFESSORSHIP TO SUPPORT STUDENT ACTIVITIES.

control, and harvest technologies and logistics. His research is made possible by strong collaborations with agricultural machinery industry partners and the support of the Bioeconomy Institute at Iowa State.

One of his current collaborative research projects with the USDA-ARS and Idaho National Labs examines different harvest scenarios, their affect on soil nutrient removal and soil quality and the cellulosic ethanol production potential.

Birrell and his ISU colleagues are developing new biomass harvesting and transportation machinery and evaluating stover harvest sys-

tems that balance production efficiency and environmental protection.

"Based on our findings we don't recommend harvesting the lower portion of the stalk due to relatively low increase in stover yield and decrease in field harvest capacity, with only a small increase in ethanol yield and higher nutrient replacement costs" Birrell says. "It also is critical to leave sufficient surface cover to provide erosion protection, and maintain soil carbon levels." ⑤

HATCHING PLANS TO ADVANCE IOWA EGG PRODUCTION

By Ed Adcock

KEVIN VINCHATTLE THINKS highly of research done by Iowa State University. And it's not just because he's an alum. The research helps improve the operations of egg producers he represents.

Vinchattle is in his 10th year as executive director of the Iowa Egg Council and chief executive officer of the Iowa Poultry Association. He earned a bachelor's degree in biology in 1978 with an environmental studies emphasis.

Vinchattle says Iowa State's research findings benefit all egg producers, especially those in Iowa. Having the research done on Midwest facilities is invaluable to producers.

"It allows us to better understand the environment in which we work," he says.

During the last 12 years Iowa State has been increasingly performing research into issues of concern to egg and poultry producers. One of the leaders on campus in partnering with producers has been Hongwei Xin, professor of agricultural and biosystems engineering.

The Iowa Poultry Association presented Xin its Poultry Industry Person of the Year Award last September for his work on poultry welfare, housing and air quality.

Xin says the goal of his research is to produce science-based information that can be used by producers in their

"IOWA EGG COUNCIL FUNDING HAS ENHANCED OUR RESEARCH CAPABILITY TO ADDRESS INDUSTRY NEEDS..."

decision-making. Much of the work is done in commercial poultry facilities, which gives it a real-world basis and demonstrates that it can be applied by producers. Vinchattle's organization has helped open the door for researchers.

"Without this partnership it would be impossible to get on a commercial farm



ISU's Hongwei Xin (left) and Kevin Vinchattle partner to set up research in Iowa's commercial poultry facilities to the benefit of the state's egg producers and poultry science.

to do what we need to do," Xin says. "Iowa State has developed a mutual trust with the Iowa Egg Council to work with producers."

There is a lot to study in Iowa, the nation's leading egg producer, with about 54 million laying hens, and leading egg processing state. The Iowa Egg Council spends as much as \$300,000 to \$400,000 a year on research, most of which goes to Iowa State.


"Iowa Egg Council funding has enhanced our research capability to address industry needs," Xin says.

For example, studies have looked at air quality and emissions associated with two typical types of hen housing and manure-handling systems used by producers. Certain additives ap-

plied to the manure reduced ammonia emissions.

"Manure is a great fertilizer. Research is done on the nutrient content and application, storage and emission issues. It's a valuable organic fertilizer," Vinchattle says.

Researchers have also compared the common industry diet with different formulations that feature reduced crude protein or inclusion of fiber in hen diet to decrease ammonia emissions from the hen manure. Increasing fiber with dried distillers grains or wheat middlings shows promise and could reduce feed costs.

Xin says an area that will become increasingly important for poultry research is animal welfare issues. Future research at Iowa State will look at how different housing systems affect air quality and bird welfare, for example cage versus floor-raised chickens. 

SENDING OUT AN SOS FOR SOYBEANS

By Brian Meyer

SOYBEANS ARE ASSAILED ON all sides by diseases known widely among soybean growers by their acronyms. SDS. SCN. ASR. SOS!

Leonor Leandro, assistant professor of plant pathology, is one of ISU's scientists conducting research on multiple disease enemies of soybean with substantial funding from growers' checkoff dollars provided by the Iowa Soybean Association (ISA).

In fact, Leandro was hired as part of a \$500,000 financial commitment from the Iowa Soybean Association to support new research in fungal pathogens.

"Most of my research on fungal diseases is currently funded by ISA," Leandro says. "My research focuses on soybean rust and sudden death syndrome. With rust, the goal is to search for partial resistance to the disease by comparing the infection process on different plant hosts. This is so important because rust is a potentially devastating disease."

Leandro and her colleagues are involved in several studies on sudden death syndrome ranging from the genetic level, to epidemiological studies, to a crop management study on row spacing and planting density.

"Sudden death syndrome is challenging because there are several environmental and soil factors that appear to affect its severity, including an interaction with the soybean cyst nematode," Leandro says. "We need to better understand these interactions in order to improve disease management."

The research of Leandro and many others currently on campus is the latest chapter in a continuing story of partnership between ISU and the Iowa Soybean Association.



Thanks to a partnership with the Iowa Soybean Association, Leonor Leandro is addressing major concerns of soybean growers through her research at Iowa State.

Since 1972, the association has contributed \$33,111,343 to ISU research to address production challenges that have limited soybean yield and producer profitability. In 2007 alone, the ISA provided more than \$2 million for research.

"Because of this partnership, average soybean yield has increased 34 percent since the early 1980s due in part to improved production practices and disease and insect management recommendations developed and delivered by Iowa State researchers and extension," says Ray Gaesser, the president of the Iowa Soybean Association who farms near Corning.


The partnership has yielded notable successes, including:

- Soybean varieties that produce heart-healthy oils.
- Food-grade soybean varieties that international customers rely on.
- An initiative to reduce yield loss from soybean cyst nematode, which resulted in hundreds of varieties with resistance.
- The Iowa Soybean Rust Team, a public-private partnership that prepared Iowans for the arrival of a new pathogen, Asian soybean rust.

• Financial support for the hiring of new faculty conducting applied research, including Leandro and ISU's state soybean extension specialist Palle Pedersen.

"The goal of my research is to increase knowledge on the biology and epidemiology of these diseases, which is essential for effective disease management," said Leandro. "We are particularly interested in supporting the development of resistant varieties. That's why the work is important to Iowa soybean growers because it can result in improved soybean productivity."

Leandro sees the partnership between ISU and the state's soybean growers as very productive and beneficial.

"It really energizes and strengthens the interface between soybean growers, commodity groups and Iowa State researchers, and therefore supports our land-grant mission," says Leandro. "It's also helps stimulate collaborations within ISU and with other institutions and keeps researchers focused on the needs of soybean growers." 

IOWA STATE UNIVERSITY

College of Agriculture and Life Sciences

RECRUITMENT SUCCESS

Enrollment is up in the college with nearly **2,700 undergraduates** and **700 graduate students**. That's an increase of 158 undergrads and 31 grads over one year ago. This was the second straight year for double-digit freshman-and-transfer increases in the college. Two-thirds of the college's students received financial aid.

Fall 2007 Enrollment Data

	Undergraduate	Graduate
Men	1,520	413
Women	1,177	264
College Total	2,697	677
Total ISU students	21,004	4,664

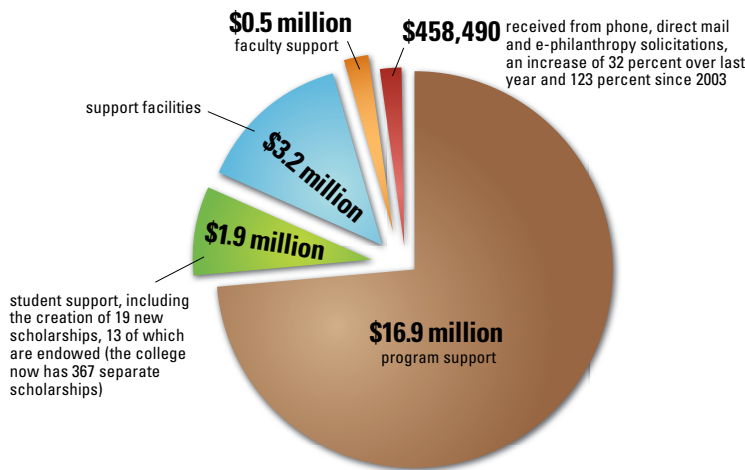
EXTENSION SERVICE TO IOWANS IN 2007

A total of **150,135 Iowans** participated in Agricultural and Natural Resources Extension's noncredit workshops, conferences, field meetings and home study programs to increase their understanding and skills related to agricultural enterprise management, natural resource protection and economic development. Another **169,271** Iowans called Agricultural and Natural Resources Extension hotlines or received individual consultations.

FUNDRAISING

In 2006-2007, the college had its second best fundraising year ever – for the third year in a row. (It's hard to beat 1999, when an \$80 million gift was announced.) Nearly 4,000 donors expressed their generosity with nearly **\$23 million**, an increase of 17 percent over a year ago.

2007 fundraising highlights for the college include:



College of Agriculture and Life Sciences Ambassadors are shown with college administration and recruitment staff. The student ambassadors have volunteered over 950 hours during the fall semester, planning campus visit experiences for prospective students, hosting prospective students and visiting Iowa high schools.



ABE PROGRAM RANKS NEAR TOP IN NATION

The Agricultural Engineering program at Iowa State is ranked **second in the country** in the U.S. News & World Report's 2008 **"America's Best Colleges"** annual rankings. The Department of Agricultural and Biosystems Engineering jumped four spots from the last ranking and is the only Iowa State department ranked in the top 10. The ranking is based on the opinions of deans and senior engineering faculty nationwide. Iowa State University is ranked among the top one-fourth of all public universities nationwide.

Ramesh Kanwar, ABE Chair



FUTURE PLANS OF COLLEGE OF AGRICULTURE AND LIFE SCIENCES RECENT GRADUATES

Graduating seniors attending the college's May convocation wrote their plans and comments on cards to be read as they were recognized. These are a few samples:

- returning home to the family farm
- working as an account manager trainee position with Pioneer Hi-Bred, Mankato, Minn.
- will work for forest service in Oregon
- will attend Creighton Law School focusing on corporate/business law
- working in marketing department at Kinze Manufacturing
- will be a zookeeper at Blank Park Zoo, Des Moines
- working as a milling sales rep for ConAgra, Omaha
- agronomist with Linn Coop Oil Co., Newhall
- planning to attend medical school in the fall
- will be an ag loan officer with Northeast Security Bank, Fredericksburg
- joining U.S. Army Medical Service Corps
- going to graduate school in microbial genetics
- will be an interpreter at Denali National Park and Preserve, Alaska
- will be an equine trainer for Junior Blind of America in California
- plans on working for Bunge Corp. in Arkansas (and maybe running for governor)

SNAPSHOT OF OUR ALUMNI, 2007

19,202 ALUMNI LIVING IN IOWA
26,171 ALUMNI IN MIDWEST (SD,WI,NE,KS,MN,MO,IL)
36,572 ALUMNI IN U.S.
1,243 ALUMNI WITH INTERNATIONAL ADDRESSES
37,815 TOTAL ALUMNI
83.5% MALE, 16.5% FEMALE

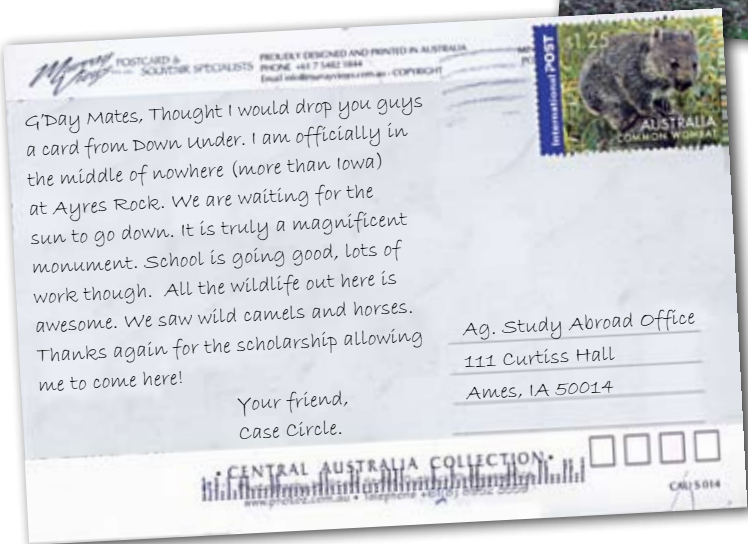
GRADUATION RATES

The College of Agriculture and Life Sciences has the **highest graduation rate on campus** at 74%. Iowa State's composite graduation rate is 65.8%.



MORE THAN 98 PERCENT PLACEMENT

For 2005-2006 graduates of the College of Agriculture and Life Sciences, **98.2 percent** (594 of 605) were placed within six months of graduation. In 19 out of 24 majors, **100 percent** placement was recorded. Sixty-eight percent are beginning their careers in the state of Iowa.



-- Excerpt from a postcard sent to the College of Agriculture and Life Sciences Study Abroad Office in April. Case Circle, a junior in agriculture studies, is a world traveler thanks to support from the office. He has participated in programs in Australia and Argentina and is busy selecting his next study abroad program.

SCHOLARSHIPS

The college offers more than \$1 million in scholarships every year

\$1,000,000

INTELLECTUAL PROPERTY

College's percentage of ISU patent disclosures:

(68)

College's percentage of ISU active licenses:

(46)

COLLEGE OF AGRICULTURE AND LIFE SCIENCES FACULTY AND STAFF BY THE NUMBERS

382

professional and scientific and support staff

285

tenured or tenure-track faculty in 15 departments

19

endowed chairs and professorships

More than 50

faculty in other colleges on Experiment Station research appointment



The College of Agriculture and Life Sciences' annual Agriculture Career Day was filled to capacity with recruiting employers on Oct. 23, 2007. The career fair is the largest in the nation attracting 151 companies who recruited students for jobs and internships. The Ag Career Services Office coordinated 630 interviews for visiting companies in the three days following the event.

RESEARCH – EXPERIMENT STATION

The Iowa Agriculture and Home Economics Experiment Station, the research program directed by the Dean of the College of Agriculture and Life Sciences, receives both state and federal funding.

State Funds

\$34,493,006

Federal Formula Funds (Hatch, budgeted for state fiscal year)

\$4,028,617

Federal Formula Funds

(Multistate Research, Forestry, Animal Health, estimated)

\$2,062,975

Total, State and Federal Funds

\$40,584,598

BUDGET

The College of Agriculture and Life Sciences will receive more than \$68 million from the state of Iowa and the federal government this year to carry out its teaching, research and extension mission.

EXTENSION

The Agriculture and Natural Resources (ANR) Extension Program in the college receives combined resources from a state budget line item and federal formula funds from U.S. Department of Agriculture's Cooperative State Research, Education and Extension Service.

Funds-Extension Campus Faculty \$5,616,888

Funds-ANR Field Specialists \$3,438,017

ANR Administration \$265,539

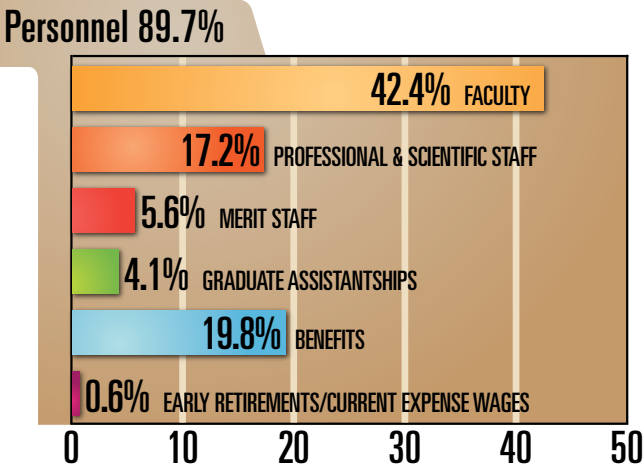
Total, ANR Extension Funds \$9,320,444

GENERAL UNIVERSITY

The college will receive \$19,111,881 from an Iowa State University line item in the state budget that funds nearly all campus personnel, facilities and programs. The college primarily uses these funds to support teaching programs.

ALLOCATION OF STATE AND FEDERAL FUNDS

State and federal appropriations to the college's departments, centers and programs for research, teaching and extension are committed to personnel and to supplies and services. Supplies and services make up 10.3% of the total budget. The majority is in personnel shown below.



SPONSORED FUNDING

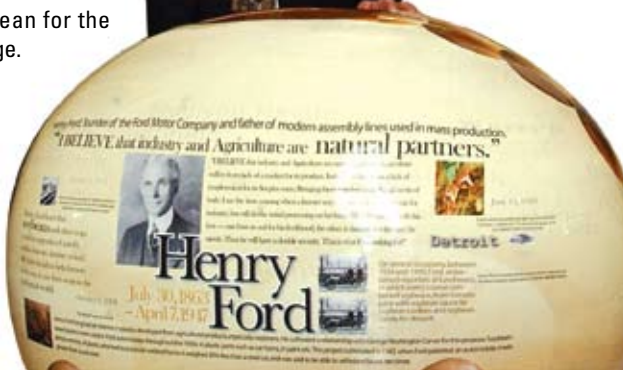
The College of Agriculture and Life Sciences receives sponsored funding from several sources to help support its research, teaching and extension programs. Sponsored funding includes support received directly from federal, state and local government units, businesses and corporations, foundations and associations. The College of Agriculture and Life Sciences, the Experiment Station and Agriculture and Natural Resources Extension generated more than \$55.76 million in grants, contracts and cooperative agreements during FY07. That number is 20.5 percent of the university's FY07 total sponsored funding, which besides research, includes funding for public service/extension, education, financial aid, buildings, equipment, etc. This funding is building academic excellence in the College of Agriculture and Life Sciences as well as creating new economic opportunities for Iowans through research and development.

SOY ON PARADE

The college purchased a piece of soybean artwork that was part of the Iowa Soybean Association's Soy on Parade promotion. The giant soybean, about four feet in diameter, is titled "History of Soy" and features ISU's George Washington Carver and Henry Ford and their contributions to new uses for soybeans. It was on display over the summer in the College of Agriculture and Life Sciences deans' suite in Curtiss Hall. The deans became so fond of the piece they decided to make a bid for it when the soybeans were auctioned off in September. After a fevered bidding process, Larry Johnson, shown at right, director of the Center for Crops Utilization Research, was able to secure the bean for the college.



It now resides outside the main office in the Center for Crops Utilization Research in the Food Sciences Building. The auction raised more than \$20,000 by selling off 18 artful soybeans for the ISA Ag Scholarship Program for Iowa high school seniors pursuing a degree in an agricultural-related field.



SECRETS OF PLANT GENOMES REVEALED!

Jonathan Wendel, chair of the ecology, evolution and organismal biology department, is featured in a 23-minute, MTV-style movie about plant genomics for high school and grade school students. The "Secrets

of Plant Genomes Revealed!" features three scientists who are experts studying the genomics of cotton, corn and potatoes. Wendel's segment on cotton starts out in a corn field and jumps to the largest cotton field in Iowa – Wendel's research plants in the greenhouse on top of Bessey Hall on ISU campus. The National Science Foundation commissioned Minnesota Public Television to produce the video, which is available on-line, www.ag.iastate.edu/stories.



MYSTERY DONOR'S GENEROSITY UNCOVERED

Across more than four decades, Vincent Branigan, a farmer in Pocahontas County, and ISU distinguished professor of economics Neil Harl traveled thousands of miles of roadways together to attend seminars. In the eulogy he delivered at Branigan's funeral last summer, Harl revealed a secret. For about 40 years, Branigan had been an anonymous philanthropist, donating nearly \$100,000 to support ISU agriculture scholarships. Why? In 1936, during the Depression, he was fortunate to receive a Sears-Roebuck scholarship that allowed him to attend Iowa State. In 1966, with Harl's assistance, Branigan decided to begin giving something back to help young people learn about agriculture at ISU. Branigan gave Harl permission to reveal his identity when he died, in hopes it would encourage others to give. Branigan died June 24 at the age of 90. Harl said, "I'm supremely confident that, as St. Peter welcomed Vince, St. Peter likely said, 'Well done, thy good and faithful servant, well done. And by the way, the next seminar starts in 10 minutes.'"



AWE participants are shown touring Golden Grains Energy Ethanol Plant in Mason City.

HERO AMONG US

College alumnus and Army Capt. Timothy Gittins ('98 ag education) was honored as one of the Time 100, the news magazine's list of the most influential people in the world in the magazine's 100 People Who Shape Our World edition. In the May 14 issue, Gittins was called "an apt symbol of the heroism that the U.S.'s pair of lengthening wars have demanded of the roughly 1 million men and women who have fought them." Gittins also received the Gen. Douglas MacArthur Leadership Award in a Pentagon ceremony in May. He commands the 101st Airborne Division's Company C, 1st Squadron, 61st Cavalry Regiment, and will be an instructor beginning in the Captains Career Course. See his profile on-line at www.ag.iastate.edu/stories.

AG NOVICES "AWE"ED BY AG

More students enrolled in the College of Agriculture and Life Sciences have little or no farm experience. Three such students gained first hand farm experience through the Agricultural Weekend Experience (AWE) program in July. The program gives students in the college the opportunity to experience agriculture through a stay with an Iowa farm family and agricultural business tours, farm visits and activities. AWE is co-sponsored by the College and the ISU Agricultural Endowment. See photos and learn more on-line at: www.ag.iastate.edu/stories.

STORIES

IN AGRICULTURE AND LIFE SCIENCES

SPRING 2008

IMPACT: WATER QUALITY

Look for more STORIES in your mailbox this spring from the College of Agriculture and Life Sciences.

In the upcoming issue, **Impact: Water Quality**, learn how ISU researchers are using **riparian buffers** to enhance **stream quality**, meet **award-winning teachers** and catch up with **globe-trotting students**.

Discover how **ISU Extension** partners with **local leaders** to **protect watersheds** and how **college alumni** are impacting the state, nation and world.

IOWA STATE UNIVERSITY
College of Agriculture and Life Sciences
Presents

ISU Sesquicentennial Lecture
*Standing on Shoulders:
The Next 150 years*

Lowell B. Catlett, Regent's Professor and Dean, College of Agriculture and Home Economics, New Mexico State University

February 21, 2008
7 p.m.
Sun Room, ISU Memorial Union

**Standing on Shoulders:
The Next 150 years**
In 1858 knowledge was doubling approximately every 100 years while today it doubles approximately every 16 months—thus a farmer/citizen plucked from 1700 and placed in the world of 1858 would have little adjustment to make, yet a farmer/citizen of 1858 placed in the world of 2008 wouldn't know where to begin. The world of 2158 is, to be sure, unknowable—but it can be dreamed. Catlett, an ISU economics alum, will walk the audience through potential futures and how to prepare to make the next 150 years the most phenomenal in history.

MEMBERSHIP MAKES A DIFFERENCE



Your ISU Alumni Association is reaching new heights!

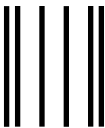
The new ISU Alumni Center is scheduled to open in April 2008, and the Alumni Association has set a goal of reaching 55,000 members by the end of 2010. Join today at www.isualum.org or call toll-free 1-877-ISU-ALUM.

MEMBER BENEFITS INCLUDE:

- **Exclusive access** to the NEW Alumni Center on game days beginning fall 2008
- CySpace online alumni community (www.cyspace.isualum.org)
- Quarterly **VISIONS** magazine
- **ISU wall calendar**
- **Discounts** on many products, services, and events
- Go to www.isualum.org/benefits for a complete list of benefits

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